

AMENDMENTS TO THE CLAIMS

Please add new claims 9-17 as follows:

9. (New) A twin magnetic loop ("TML") vibrator-speaker multifunctional transducer, comprising:

a bowl-shaped magnetic transfer having a flange (6), having a first top side and a bottom side;

a cylindrical magnet (5);

a disc-shaped pole core (4), said pole core being placed on the cylindrical magnet and centered in the bowl-shaped magnetic transfer on the top side, forming an inner magnetic loop;

an annular pole piece (8);

an annular magnet (7), having an inward surface and an outward surface, said annular magnet overlaying the annular pole piece and being placed on the bottom side of the flange of the bowl-shaped magnetic transfer, forming an outer magnetic loop,

wherein said inner magnetic loop and outer magnetic loop are integrated.

10. (New) The TML vibrator-speaker multifunctional transducer of claim 9, further comprising:

a housing supporting base (9); and

an annular resilient plate (3) connecting to the flange at the top side of the bowl-shaped magnetic transfer,

wherein said the disc-shaped pole core, the bowl-shaped magnetic transfer, the annular pole piece, the cylindrical magnet and the annular magnet are coupled to the housing supporting base via the annular resilient plate.

11. (New) The TML vibrator-speaker multifunctional transducer of claim 10, further comprising:

a vibrating coil (10), said vibrating coil being placed between the bottom side of the bowl-shaped magnetic transfer and the inward surface of the annular magnet;

a rigid sheet (11), said rigid sheet being connected to the vibrating coil at the center of the

rigid sheet, said rigid sheet joining the supporting support base at the perimeter of the rigid sheet.

12. (New) The TML vibrator-speaker multifunctional transducer of claim 10, further comprising:

a voice coil (2);

a vibrating diaphragm (1), said voice coil joining said vibrating diaphragm at the center of the vibrating diaphragm, for placing said voice coil into a spacing of the inner magnetic loop so as to produce sound.

13. (New) The TML vibrator-speaker multifunctional transducer of claim 12, wherein the vibrating diaphragm used to emit sound is made of one of a polyester film, a perm alloy plate and other voice diaphragm materials.

14. (New) The TML vibrator-speaker multifunctional transducer of claim 10, wherein the inherent resonant frequency of the magnetic loop, the voice coil and the vibrating diaphragm for sound function, is preset a value above 400HZ.

15. (New) The TML vibrator-speaker multifunctional transducer of claim 11, wherein the inherent resonant frequency of the vibrating coil, the resilient plate and the TML for performing vibrating function, is between 100-200HZ.

16. (New) The TML vibrator-speaker multifunctional transducer of claim 9, wherein:

the magnets are elliptical column and elliptical ring in shape;

the spacing between the magnets are elliptical rings in shape; and

the voice coil, the vibrating coil, the pole core, the magnetic transfer, the annular pole piece and the resilient plate are also elliptical in shape.

17. (New) A twin magnetic loop ("TML") vibrator-speaker multifunctional transducer, comprising:

a bowl-shaped magnetic transfer having a flange (6), having a first top side and a bottom

side;

a cylindrical magnet (5);

a disc-shaped pole core (4), said pole core being placed on the cylindrical magnet and centered in the bowl-shaped magnetic transfer on the top side, forming an inner magnetic loop;

an annular pole piece (8);

an annular magnet (7), having an inward surface and an outward surface, said annular magnet overlaying the annular pole piece and being placed on the bottom side of the flange of the bowl-shaped magnetic transfer, forming an outer magnetic loop, wherein said inner magnetic loop and outer magnetic loop are integrated;

a housing supporting base (9);

an annular resilient plate (3) connecting to the flange at the top side of the bowl-shaped magnetic transfer, wherein said the disc-shaped pole core, the bowl-shaped magnetic transfer, the annular pole piece, the cylindrical magnet and the annular magnet are coupled to the housing supporting base via the annular resilient plate;

a voice coil (10), said voice coil being placed between the bottom side of the bowl-shaped magnetic transfer and the inward surface of the annular magnet;

a vibrating diaphragm (11), said vibrating diaphragm being connected to the voice coil at the center of the vibrating diaphragm, said vibrating diaphragm joining the supporting support base at the perimeter of the vibrating diaphragm;

a vibrating coil (2);

a rigid sheet (1), said vibrating coil joining said rigid sheet at the center of the rigid sheet, for placing said vibrating coil into a spacing of the inner magnetic loop so as to produce sound.